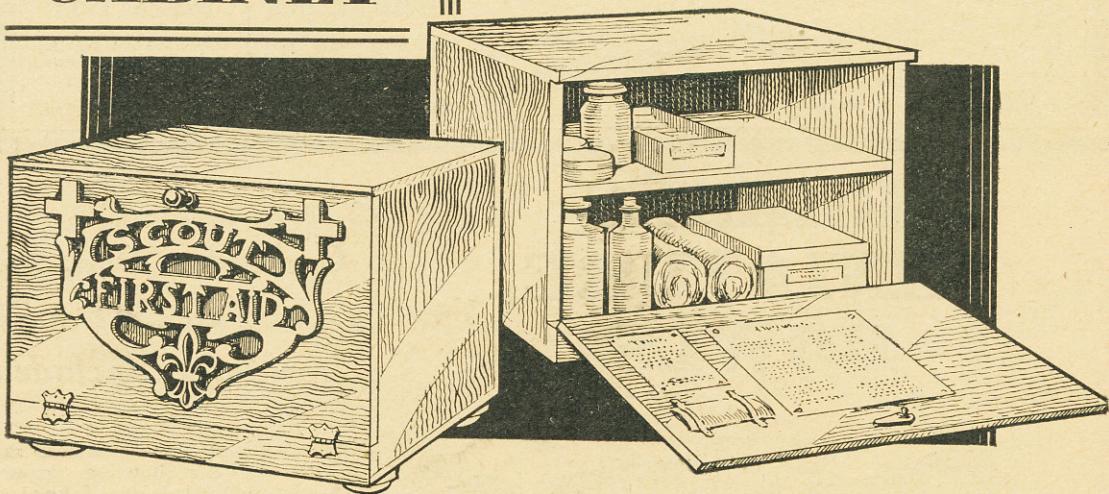


Hobbies

WEEKLY

How to make this
**SIMPLE
FIRST-AID
CABINET**



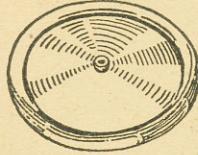
May 8th. 1937

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Vol. 84. No. 2168

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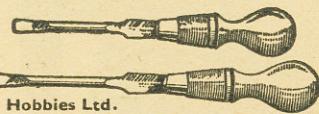
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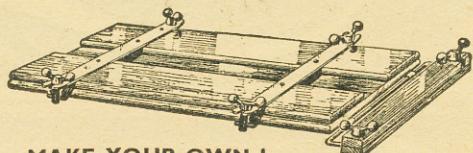
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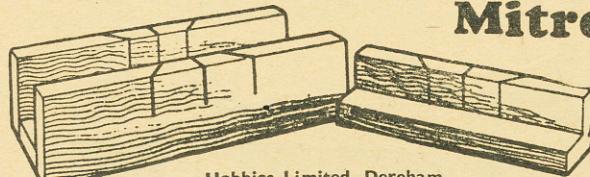
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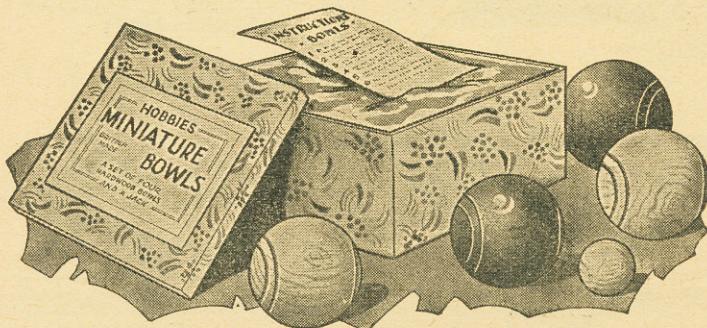
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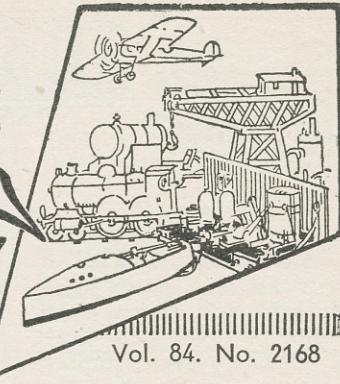
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Hobbies

WEEKLY



May 8th. 1937

Vol. 84. No. 2168

ALREADY I have received a very large number of photographs of Coronation Coach Models made by readers all over the country. To say nothing of that delightful replica of the Coronation Chair. Both these "caught on" amazingly and hundreds have been on view or will be by next week. It is impossible for me to mention all the newspaper cuttings sent me showing and talking about the work of our readers.

YOU must remember, too, that prizes are being offered for the Medal Stand made to our patterns last week. Medal, wood and design can be made quite easily and will prove a pleasing souvenir of next week's activities. Don't forget now.

IT is now a fortnight since I had the patterns printed for a working Model Wind Indicator and readers are getting anxious, naturally, for the second portion. But you see, I have had so many good things to offer that it has been impossible to get it in up to now. That is one of my troubles—trying to make a dozen good things go into the space allotted for one. Anyhow, you shall definitely have the patterns for the figures next week, and I anticipate hearing shortly of some actually working. You know, it is always a joy to receive your letters of the work you have done.

HERE is one, for instance, from Norwood, Johannesburg, South Africa. "I have now worked up quite a nice little business which started with a 4/6 handframe to a Hobbies Companion Fret-saw and Lathe and so now to two electrically driven Saws. I have a good commercial connection."

A USEFUL method of spray painting the Coronation Trump Indicator is sent in by K. J. McCann of Thornton Heath. First paint the whole of the indicator white, and when dry, take an old tooth brush and dip in blue

paint. Then stand about 6ins. away and hold a penknife in the right hand and the brush in the left. By gradually drawing the knife backwards along the bristles you spray tiny spots of paint on to the work. When this is dry proceed in the same way with the red paint, but be perfectly sure that the paint is thoroughly dry on each occasion. A very striking effect is thus obtained.

IN the Scout Missing Letter Competition there was only one entrant who was successful in getting all the words correct. This was J. Bartell of Silvertown, London, whose solution was Boots, Lanyard, First Aid, Gartertabs, Compass, Blankets. A number had only one error, but the general number correct was very high.

"SHIP-LOVER" (whoever he is) sends me a post card—"Congratulations, Editor, on that fine piece of work 'The Stirling Castle.' I hope you select a destroyer for the next model." Shall I?

AMERICANS, as you perhaps know, delight to work out statistics on everything—how many strokes a fretsaw blade makes in an hour—how far you walk in a week, and so on. I see the Children's Welfare Federation carried out a survey among 18,000 boys and girls to get their "reactions." They were asked their favourite vegetable and potato came first with spinach second. Cabbage came nearly at the bottom. In the hobbies vote most boys put stamp collecting first and girls preferred dancing.

I KNOW you all like hearing of peculiar hobbies, and wonder if you can beat the one of keeping a diary and faithfully filling its pages year in and year out, with something more exciting than—"Wet today" or "To bed early." No, I mean keeping a diary properly. Anyhow in Brazil there is a club of these diarists with a membership of 2,000.

The Editor

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Next Week's Design—Coronation Frame

Correspondence should be addressed to: The Editor, *Hobbies Weekly*, Dereham, Norfolk, and a stamp enclosed with the Reply Coupon from Cover iii if a reply is required. Particulars of Subscription rates, Publishing, Advertising, etc. are on cover iii.

Send your own simple tips to The Editor, Hobbies Weekly, Dereham, Norfolk. Keep them short and add rough pencil sketches if possible.

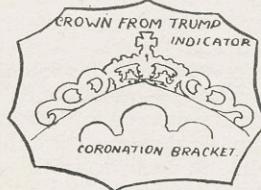
HINTS AND TIPS



For original Tips published the sender will receive a Hobbies Self-Filling Fountain Pen. We cannot acknowledge or print all tips sent in.

Coronation Bracket

TO improve the Coronation Chair and Bracket design, transfer the Crown from the Coronation Trump Indicator in



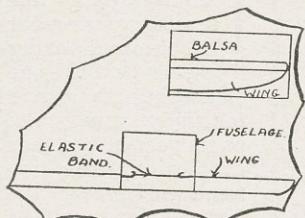
March 27th issue to top of bracket. Also cut out two extra pillars and curved pieces and fix them on the front of the shelf. Hang ribbons from them to the back of the bracket to make a bright effect.—(R. Stiff).

Fountain Brush

OBTAIN a fountain pen and take out the nib, etc. Next obtain an ordinary water colour brush and remove the shank, cut the holder of the hairs to the size required, and fit into the pen. The brush is now complete. When filling, keep well down in the water colour. This brush is very useful when painting bookbacks, etc. When the brush dries, press the button or plunger and the paint is renewed.—(G. Dawson).

Model Aeroplane Tip

IF you have made a low winged monoplane here is a useful tip. To prevent the wing smashing in the event of a smash, do not fasten



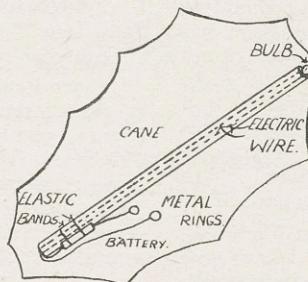
the wing on to the fuselage, but fasten on two hooks held together with an elastic band. The sketch will make this quite clear. Also fix a small piece of balsa on the leading edge of the wing to prevent smashing.—(W. W. Clarkson Jr.).

Worms in Furniture

WHEN furniture is slightly worm eaten the best time to cure it is in May or June when the worm lays her eggs. Turpentine should be squirted into the holes with an oil can and this method will rid the furniture of wood-worms.—(A. Willmer).

A Magic Wand

TAKE a hollow cane about 2 ft. long. Pass an electric wire through the inside of it. At one end of the cane fix a small bulb, and connect it to the electric wire. On the other tie a small round battery. On the one terminal fix one of the leads of the electric wire. On the other terminal fix a single electric wire



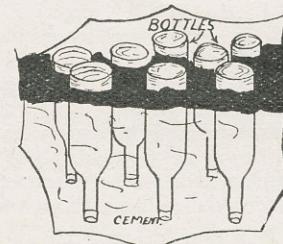
about 6ins. long with a metal ring at the end of it. Make the other lead of the electric wire which passes through the cane, and which is not connected to the battery a bit longer with a metal ring at the end of it. Now by holding the cane, slip the 2 rings, one on each of the first fingers of the hand. By letting your fingers touch each other, the metal rings will also touch and the light will be switched on, in the bulb.—(E. D. Vassiliadis).

Plaster of Paris

WHEN filling in holes in walls with plaster of paris, mix it with milk instead of water. This keeps it moist and so t for a long time.—(G. A. Clegg).

Paths and Edging

BOTTLES can be used for edging a path or making a complete one. Collect bottles about 3ins. in diameter, and edge the garden path with them (as



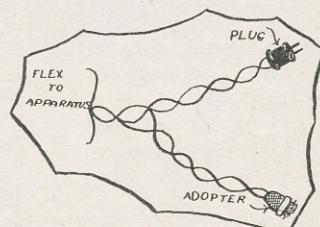
shown in sketch. Let at least 3ins. be showing) if possible more if used for edging, but sunk lower if used in bulk in a path. Make a trench 9ins. deep and fill it $1\frac{1}{2}$ of the way up with cement. Then push the bottle half way in, and let the cement dry. When dry fill with soil.—(F. Galpin).

Frosting Glass

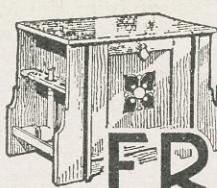
A QUICK and effective way of frosting a window, is to clean and dry the glass, and paint it with white enamel. Starting at the top of the window, dab over the surface of the painted glass with a rubber sponge until the desired effect is produced.—(Leslie Poole).

Spotlight

THE following is a tip which saves much time and trouble. When apparatus such as the spotlight recently described in



"Hobbies" is used in different places and plugs are not always available, the tip shown in the sketch saves much time in fitting adapters in place of plugs and vice-versa.—(L. Stanley).



FOR
THE



FREITWORKER

ALTHOUGH there is no separate Gift Design sheet this week, we have by careful planning incorporated on our centre pages, patterns for an article which is equal to any which usually appears in these pages. These patterns are for a First-Aid Cabinet, and the wording of the overlay has been used to make it specially applicable to Scouts. There is, however, no reason why an ordinary reader should not be able to use it merely by cutting off the scroll of the word "Scout," and featuring the overlay as shown in the drawing herewith.

Thus the cabinet will form a general utility article for any home, and is just a useful size to have hanging on the wall in an accessible place. The cabinet is 12ins. long, 8½ins. high, and 8½ins. deep, and has a drop front which it is suggested can be used for notes and notices pinned on or clipped behind bands as can be seen in the drawing of the finished article.

Inside the cabinet there is room for small bottles and if necessary a shelf can be added nearer the top to allow for small pots, tins, etc.

Standing or Hanging

The picture of the finished cabinet shows it with that, and this is, of course, if it is to be used for standing. If, on the other hand, it is to be hung, then two wall hangers must be fixed at the back and the feet omitted.

The cabinet is quite simple to make, and as usual a special parcel of wood is provided by Hobbies Ltd. in which all the boards are cut a suitable size and planed. This makes the construction much more simple, as one has only to mark out the patterns and get along with the cutting.

The edges of the wood, too, are straight and a tenon saw is quite useful to ensure that these lines are maintained. This is quite important because the parts have to butt up close to each other, and a straight line is essential.

The ends, for instance, go inside the top, bottom, back and front, and a good joint must be made to provide a rigid and strong cabinet.

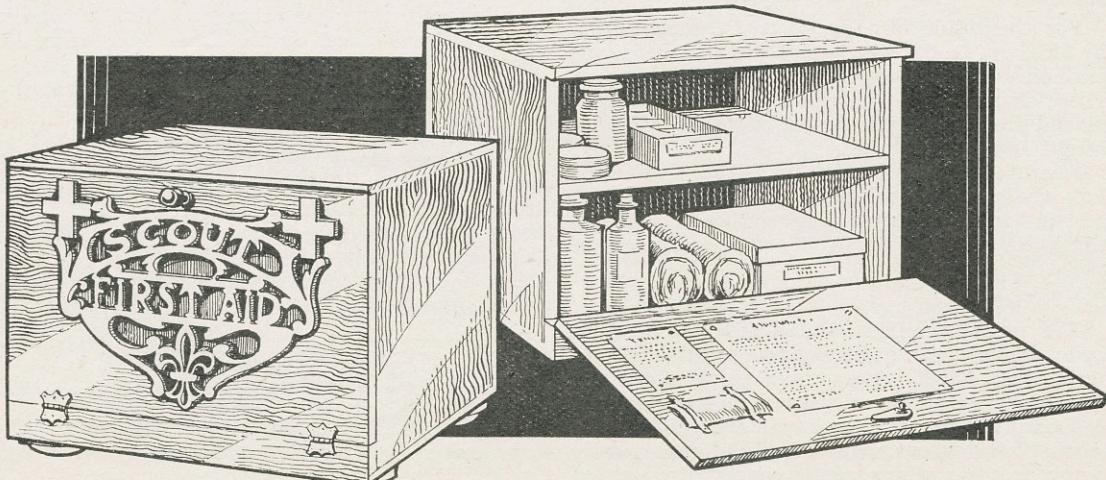
A FIRST-AID CABINET

A detail of how the work is built up is seen by the small drawing on the centre pages, whilst we give here a detail of one of the hinges showing how the drop front is fixed. There is, of course, no need to have full size patterns of the cabinet itself, because they are plain rectangular pieces, and the sizes of each part is shown.

The floor and top are cut from $\frac{1}{4}$ in. wood 12ins. long, 8½ins. wide. The two ends are $\frac{3}{8}$ ins. wide and 8ins. square, whilst the back and front are in $\frac{1}{4}$ in. wood 12ins. long and 8ins. wide. Get all the parts out and fit them together temporarily to ensure that the ends fit in snugly between the other parts. The back, top, bottom and ends can then be glued up and screws driven in if necessary to make a more rigid joint.

Strengthening Blocks

If, too, there is any wobble a good plan is to glue fillet strips along the inner corners. It must be noted that the front is not screwed on entirely in the same way as the back. When the piece



has been cut, draw a line along its length $\frac{1}{4}$ in. up from one edge.

A sawcut is then made along this line which gives a large piece and a narrow strip. The narrow strip is the piece which is actually glued and screwed on to the base, and to the two ends, and provides the support for the hinges fixed on as shown in the detail herewith.

When the strip is in position, lay the larger piece of the front in its proper place, then put the hinges on. As these will be seen it is advisable to have a pair of the fancy hinges supplied by Hobbies Ltd. as they are in brass, nicely shaped and embossed. They are easily fixed with small screws, which, of course, must not be more than $\frac{1}{4}$ in. along. See this piece which drops forward does not bind



The overlay altered for general use

on the underside of the top. Test it out first before putting any of the screws on the hinges, and if there is any tightness plane a shaving off along the whole length.

A catch is added to the top of this board to hold it shut, and the one suggested is the fancy knob No. 5386 supplied by Hobbies Ltd. This has a suitable shank which turns up into a recess which must be cut on the underside of the top. Make this recess fairly deep so the catch can sink in firmly and keep the knob tight enough to prevent it turning too easily.

The Shelf

For the inside of the cabinet, a shelf $11\frac{1}{4}$ ins. by 8ins. can be cut as a square piece of wood, and fixed on short fillet strips glued to the ends beneath. These strips can be $\frac{1}{2}$ in. wide and $\frac{1}{4}$ in. thick and extend from the back to the front at whatever height is required.

Measure the distance down at both ends to make sure the shelf is horizontal when laid in. It is best not to fix the shelf in altogether in case anything gets spilled on it, then it can be extracted and cleaned up easily.

Cut in Oak

The wood supplied by Hobbies Ltd., is oak and this lends itself quite well to a suitable finish of stain and polish. The whole thing should be treated before the overlays and feet are applied. A good plan is to take the hinges off again in order to polish the front completely and more easily, replacing them afterwards in the former position.

The overlay itself is cut from $\frac{1}{8}$ in. wood and for this the pattern shown full size is pasted down to a board with the grain running longways. Cut out carefully particularly where there are narrow links holding the various parts together. Clean up thoroughly with glasspaper of a fine grade so as not to scratch the surface.

The wording, too, will stand out much stronger if a piece of backing paper is put behind it when the whole overlay is glued on to the front. Smooth out some silver paper such as found in cigarette packets, or you can use any fancy decorative paper to go behind the wording. Cut it out the same shape as the scroll which holds the letters in place, and glue it carefully and tightly behind the overlay. Then the whole thing can be glued on in position centrally.

A Gluing Tip

A good plan to get the glue on evenly is to apply it to a piece of glass first, then lay the overlay on this. Press gently on to the glue so transferring it to the wood. Then get a long table knife, slip under the overlay and release from the glass carefully so as not to break any of the parts. The glue will be found on the back so the part can be laid in place on front of the cabinet. Drive in three or four fine fretnails at various points to fix more firmly until the glue has set. These fretnails should not be driven right home, however, but should have their heads nipped off so the nail is flush with the wood and cannot be seen very plainly.

If the cabinet has been polished, the overlay will look well treated in black or in some colour, whilst the two First Aid emblems should be painted a bright red. If it so happens that these crosses are broken through, then they can be cut as entirely separate parts from the rest of the overlay, and glued in position a little way away from it instead of close up as they are on the sheet.

If you are using the cabinet to stand, you must put on the four feet on the corners. Four circles of wood are cut from waste material according to the size shown on the sheet, and glued a little way in from each corner.

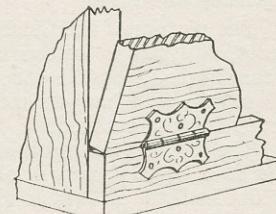
These circular base pieces then have the four No. 20 toes glued upon them. Their surface is quite smooth and it will be necessary just to rough it up with a knife in order to get the glue to hold more securely. A nail, too, driven through the centre is advisable, although it must be sunk right home in order not to scratch any surface upon which the cabinet is stood.

MATERIALS REQUIRED

Fretwood.—For making this Cabinet we supply a parcel of Oak, with four No. 27 Toes, 5/6 post free 6/-.

Fittings.—Hinges (5308) 1in., 2d., Catch (5386) 4d., postage 1 $\frac{1}{2}$ d.

A complete parcel wood and fittings will be sent for 6/6 post paid.



How the front is hinged

The AMATEUR ELECTRICIAN

Draw Curtains for home cinemas.

SEVERAL readers have written asking for details of curtain arrangements for home stages and cinemas, and their chief difficulty is the motor drive and switching arrangements. We will not go into details of curtain suspension here, as each stage will probably have something different, but we must point out that fundamentally all systems are the same.

For simplicity, we have mounted our curtains on an endless belt of fine picture cord or fishing line. This passes over suitable pulleys of Meccano, Trix or made up from wood, and then goes round the drive spindle. Before hanging the curtains, everything else must be working satisfactorily.

Automatic Control

Completely automatic control is very complicated, and probably beyond the average reader, but the control shown here has an automatic stop to the motion in one direction. Thus you may have the curtains close and then shut down the motor when closed without any manual aid. But to open

If your driving cord sags, arrange small pulleys in the centre to take the weight when the curtains are closed. Some readers may prefer to mount the curtains on entirely separate rails and use the picture cord for driving only.

The drive cord need not be too tight, because a slight slip at the start will not matter, as it will affect each curtain equally and give a gradual effect to the closing. It also allows the motor to run up to speed before full load is thrown on it.

One end of the curtain is fixed and the other is free, but attached to the driving cord, so that they move along together. You can refer to Fig. 1 for details of the curtain and general layout.

The Switch

The automatic switch consists of a mercury tube switch mounted on a pivoted arm that is actuated by the cord. Determine when you want the automatic action, i.e., for the motor to cut out when the curtain closes or opens.

This will depend on the show and the rest of your equipment, but we will assume that the motor cuts out when the curtains have opened. Then this gives you free time from the moment of closing the starting switch until the curtains are open in which to start the projector, etc.

When the curtains are closed, the switch is pulled out by hand. Mark the positions of the reversing switch 'Open' and 'Closed.' On the driving cord a bead is threaded, and this is ar-

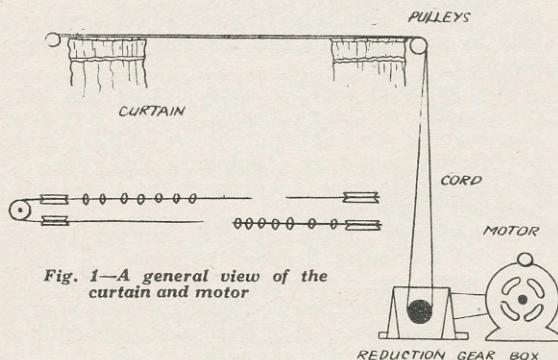


Fig. 1—A general view of the curtain and motor

them a reversing switch must be used, and this has to be manually operated. The above can, of course, be reversed in order.

The best type of motor is a constant speed one, either mains or accumulator driven. If a series machine is used and is too powerful for the work, it will race and the noise will be objectionable. However, a small series machine is very useful, as the reversing arrangements are the simplest, and it is self starting.

The motor drives a reduction gear box on the output shaft, of which the driving pulley is mounted. The speed of rotation will depend on your own ideas, but it must be fairly slow.

your own ideas, but it must be fairly slow. Set up the motor and box, and then arrange the cord for carrying the curtains. Of course, this plan can be used with even the heaviest curtains, but then you must take a more serious view of the matter and use strong pulleys and $\frac{1}{4}$ H.P. motor and other suitable apparatus.

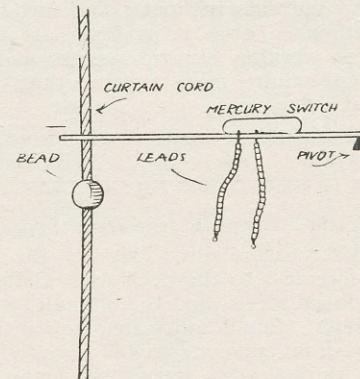


Fig. 2.—The mercury switch in position.

ranged to move the lever of the mercury switch just when the curtains are fully closed (see Fig. 2). Lock the bead in position with cotton or insulating tape. Try the switch out several times before hanging the curtains.

The switch to use is S581, and the address of the makers is Reason Manufacturing Co., Ltd., Lewes Road, Brighton.

Most readers will wish to control the curtain from their projection boxes or rooms. This is a simple matter as it only means running a cable between them and the motor. If the installation is not a permanent one, then a double length of ordinary lighting flex is ideal.

The connections are shown in Fig. 3 with details. The double pole switch is a special reversing switch and is known as a double-pole double-throw switch. These can be obtained in the tumbler form with an "off" position, and are the best to use in this case.

Failing this, use two ordinary two-way tumbler switches, with the knobs connected mechanically.

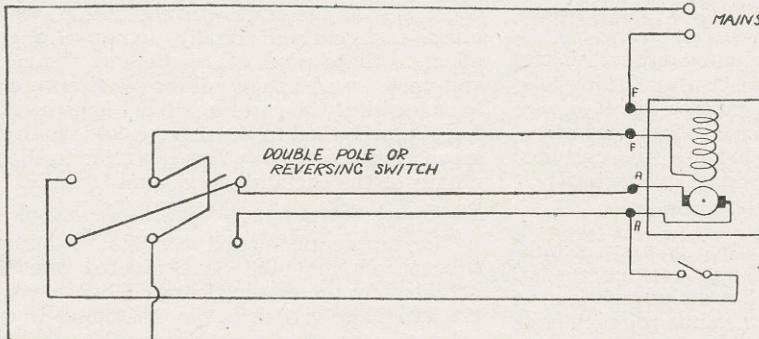


Fig. 3—The wiring circuit for the draw curtains as described

Or, as a last resource, the aerial-earth switch. Connect up as shown. The automatic switch can be omitted, in which case, connect up the two switch terminals directly to each other.

The Bichromate Cell

THE most powerful primary battery for the home worker is the bichromate cell, which has a voltage of two and is capable of giving quite heavy currents without polarising, or more simply without a drop in voltage. It is quite suitable for working electric motors and spark coils, which require more current than can be taken from a dry cell.

Two cells should be made to give a voltage of

four, which will serve for most purposes. The element consists of carbon and zinc. Use two or three (or as many as possible) old carbons from dry bell cells, clean them up and connect in series. This is the positive pole.

The negative is a strip or rod of zinc about $\frac{1}{4}$ in. thick, with a stout copper wire soldered on for connections. If possible, secure the plates to a block of

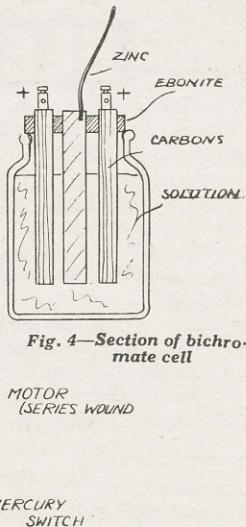


Fig. 4—Section of bichromate cell

hard wood or ebonite, so they cannot touch and yet will be supported in the electrolyte quite close together.

The container is a 2lb. glass jam jar free from cracks, etc., as the electrolyte is very corrosive. For two cells you will require 12 ozs. of bichromate of potassium and 8 ozs. of sulphuric acid. Dissolve the bichromate in $1\frac{1}{2}$ jars of water and to the mixture add slowly the acid.

If necessary, make up the solution to the required volume with water. Remove the plates when not in use, and wash off all acid. Keep the solution in well corked bottles if the cells are not used for some time. Add fresh acid from time to time to make up the strength. A detail of the apparatus is clearly outlined at Fig. 4.

Toy Land Yacht—(Continued from opposite page)

The axles measure 8ins. long by $\frac{1}{2}$ in. square. Affix the foremast to the deck with a single $\frac{3}{8}$ in. long roundhead screw, and the aft axle, with two similar screws. Small hooks are screwed to same, two to the front and one to the back. Prior to threading through the twine, tie knots in the centre (see Fig. 3) and then connect the ends as tight as possible to the rear axle.

The Wheels

The four 2in. diam. wooden wheels could be cut from $\frac{1}{4}$ in. plywood or—if you wish it to look workmanlike—you could use the plain wheels (No. 604) which are stocked by Hobbies Ltd., the set costing 4d., with suitable screws and washers 3d. extra.

Attach them with the screws with the washers between and add a little oil to prevent squeaking. The tiny flag is a piece of paper inked, folded, cut to the shape shown, then glued around the mast, a bead setting off the top. As a finish, the deck surface should be varnished, with the edges enamelled. The masts could also be varnished or left in their natural state.

MATERIAL LIST

- 1 piece plywood, 13ins. by 4ins. by $\frac{1}{4}$ in. thick.
- 1 piece stripwood, 16ins. by $\frac{1}{4}$ in. by $\frac{1}{8}$ in. thick.
- 1 piece dowelling, 16ins. by $\frac{1}{4}$ in. diam.
- 1 piece dowelling, 9ins. by $\frac{1}{4}$ in. diam.
- 2 pieces dowelling, 7ins. by $\frac{1}{4}$ in. diam.
- 1 doz. small brass hook-eyes.
- 2 wooden wheels (No. 604), 2ins. diam.

TOY LAND YACHT

THE model yacht illustrated is, of course, just a toy for the very small enthusiast. He can sail it anywhere, except on water, and that's why it is appreciated most by parents. No more wet shoes and the danger of getting too excited near ponds and lakes.

This is a yacht that brings a riot of fun. Not only does it sail merrily in the breeze, but can be guided by means of a setting cord connected to the fore and aft axles. When not in use, it can be taken down just as easily as it is erected, and best of all, you can make all the parts. The only requirements are: a fretsaw, some plywood, dowelling, hook-eyes, linen and twine.

The Dimensions

Before commencing work, note the side elevation (Fig. 1) provides you with all necessary dimensions according to the inch squares. Thus, the size of the model when rigged is approximately 18ins. high by 17ins. long, with a beam of 4ins. and a wheel track of 9ins.

Should this seem too small, however, the same number of squares can always be enlarged and the outlines followed accordingly. If you use $1\frac{1}{2}$ in. squares, this gives a height of 27ins.; length 25 $\frac{1}{2}$ ins.; beam 6ins. and wheel track 13 $\frac{1}{2}$ ins. With 2in. squares, double the measurements of the original are obtained.

The Deck

To make the deck, a piece of $\frac{1}{4}$ in. plywood should be marked as outlined in Fig. 2 and then cut out with the fretsaw. If the length of the handframe



is inadequate to make comfortable cutting, a key-hole saw or scroll saw, or even an ordinary panel saw would serve, provided you trim the edges afterwards with a spokeshave and glasspaper.

The 4in. mast base block (step) is cut from $\frac{3}{4}$ in. wood. The ring of plywood seen on top is $\frac{3}{4}$ in. diam. by $\frac{1}{4}$ in. thick. Cut or bore $\frac{1}{4}$ in. holes in the centre of both pieces of wood and then glue evenly together on the deck in the position shown at Fig. 2.

The masts and spars are cut and shaped from $\frac{1}{4}$ in. dowels. The main mast (centre) should fit tightly, but temporarily to the step block holes. It is held to the deck with fine white twine and small brass hook-eyes.

The bow sprit (fore) is glued and lightly nailed to the deck centre. Attach all hook-eyes as shown, opening those going to the main mast with the pliers or pincers at the joint. The hook-eyes are obtainable at the 6d. stores.

Fitting the Sails

The sails are shaped from fine white linen, suitable hems being made in the main sail to accommodate the dowel spars. The jib sail could be hemmed with the cord inside the fold or just tied to the three corners. Two bent nails, by the way, form the bollard for the lower main sail spar connections. (Continued opposite page)

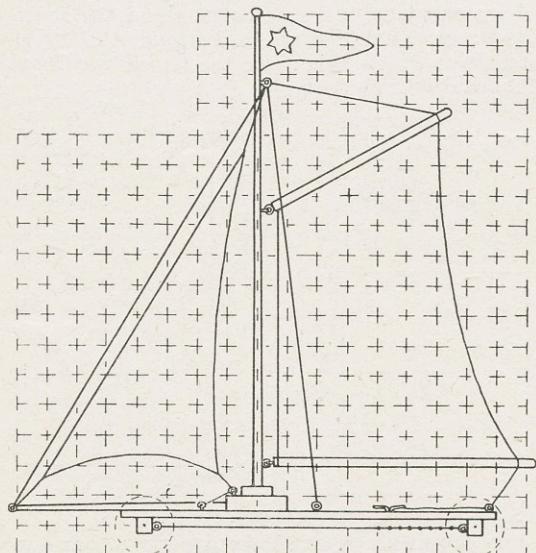


Fig. 1—A side view outlined in 1in. squares

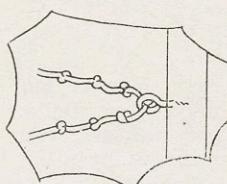


Fig. 3—How steering rope is attached

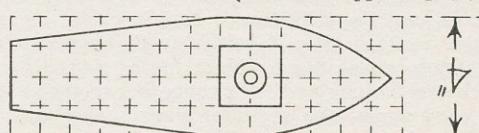
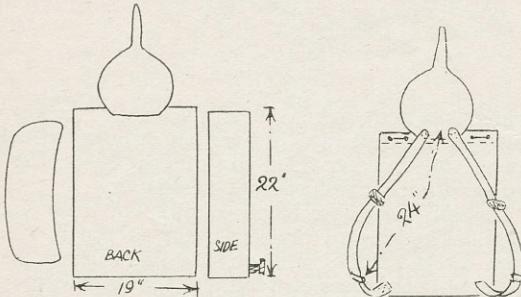


Fig. 2—A plan of the deck and mast support

MAKE YOUR OWN HIKING RUCKSACK

WITH the approach of summer, the thoughts of hikers and would-be hikers are turned to the pleasant prospects awaiting. If a beginner, you will probably be wondering about your kit. Much of it will have to be purchased from the shops and stores specialising in outdoor equipment, but there are things that you can easily make for yourself, if you're a handyman with needle and thread.

The main item in the outfit is, of course, the rucksack or pack of which there are many different types and patterns to select from. Secondhand



Details of the parts with dimensions

army packs are useful, but they are not so comfortable as the familiar rucksack, that came to us from the mountain-climbing countries. The Norwegian pattern is most popular.

Having agreed that the rucksack type is the best sort of pack in which to carry your luggage, let us consider some points about it. Firstly, the good rucksack should embody the following essentials. It must be roomy enough to accommodate your luggage, and if hike-camping it will need to be extra big because of the tent. It must be absolutely waterproof, and made of hard-wearing material to withstand wear and tear, knocks and chafings from trees, rocks, and the ground when you throw it off.

Usual Sizes

A simple rucksack is fairly easy to make but the size will depend much upon your build. Standard sizes, when you buy a rucksack, run 21in. by 20in.; 18in. by 18in.; and 16½in. by 16½in. with no pockets.

The material is important. It must be waterproof and yet not too heavy, a closely-woven canvas, not too stiff, tan or grey in colour or some other neutral tint. Size is next consideration. Generally speaking, it should be as wide as your back and as long as the distance between the nape of your neck—the seam of your jacket collar—and the bottom of your hips, minus three inches.

Its depth depends upon amount of luggage you

desire to carry. Take a tip and keep this at the lowest minimum—but a fairly useful guide is about six inches.

Having decided on the size you need, get canvas sufficient to allow for a hem about 1in. wide along the top. Make a proper job of this, as it must stand a lot of strain. Fold the material and sew it along the bottom and up one side, turning it inside out first; this will give you a kind of flat canvas bag.

Flap and Cord

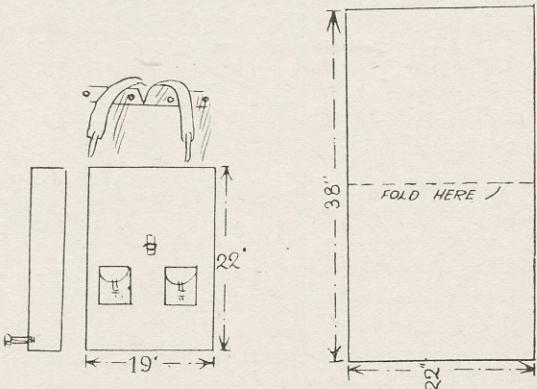
Now sew on the flap, which can be made out of a piece of similar canvas some 8in. by 6in. shaped at one end and sewn on the back of the rucksack. Next, make the holes through which the cord runs, these to be three inches apart.

Thick blind cord is used, and there should be about 12 holes altogether. Eyelets should be worked with needle and thread well waxed; run the cord through the eyelets and knot the ends.

The straps for slinging the rucksack on your back should be of canvas webbing—you can get old army webbing straps from any army and navy stores, and they are cheap, yet serve the purpose admirably. Whatever kind of straps you select, the top piece to go over the shoulders should be not less than 2in. wide, while the lower pieces, to pass below the arm-pits and join buckles at the base of the rucksack, may be 1in. or 1½in. wide.

Sew the Straps

These straps must be sewn on well; if you cannot manage this part, take the straps and the main bag of rucksack to nearest saddler and ask him to stitch them on for you; also the flap if you have not already stitched it on.



Further details of parts required

You can please yourself about pockets, but you should have at least one fairly large pocket; or two ordinary patch pockets about 8ins. by 7ins.,

with a flap secured by a short narrow strap and buckle.

Many hikers consider that one large central pocket is better than a series of small pockets. The pockets, of course, are intended to hold map, compass, notebook, small first-aid outfit, and odds and ends.

Frames for Comfort

Rucksack frames can be obtained from the dealers. These frames are adaptable, and their use tends to add to the comfort of the wearer, and helps to lessen the fatigue of carrying a load a long distance.

Frames are to be had in either cane or steel, in two sizes, large 17ins. high; small 14½ins. high. These frames are adaptable to almost any rucksack. If cost is no object then it will pay you to get such a frame; but if you have to economise you can do quite well without a frame.

Other hiking gear that you will need includes a good waterproof lightweight oilskin cape cut full to cover a rucksack without tightness, and fitted

with straps that enable the wearer to throw back the cape to hang loosely down the back at will. A sou'wester can be rolled up and tucked into the rucksack, and it may come in useful during a shower or if continuous rain sets in.

A canvas-roll first-aid outfit takes up little room and may come in useful—for some brother rambler, if not for yourself, in case of a minor accident.

Maps are often essential, and the best kind for the hiker are the ordnance survey with a scale of one inch to one mile, mounted on linen, the latter kind being slightly dearer than the paper ones, but worth the extra for their longer life.

Personal Requirements

The remainder of the outfit is of a personal kind, togs, spare clothing, books, camera, etc., and you must be guided by your own inclinations in this respect. If you intend to patronise the Youth Hostels *en route* it will be necessary to find room for mug, plate, knife, fork and spoon. Again if hike-camping you will need full camping equipment also.

POTTED HOBBIES

MAKING AND LAYING CRAZY PAVING PATHS

HERE is an interesting hobby which improves the look of almost every house, and when you have done your own, there is always a demand for this sort of work done well, by those who have little time to do it themselves. Especially is this so, in these days when so many garden suburbs are springing up, and the land around is devoid of any beauty of lay-out.

By far the best work can be done by laying odd pieces of pavement which can be purchased cheaply from the local council. The other method is constructed from cement, but the stone method is more economical, and gives a more even surface, apart from the fact that it looks better when it is done.

A Foundation

Take a number of pegs and drive them into the ground about a yard apart to mark the boundary of the edge of the path. Now carefully dig out the soil, keeping to a uniform depth of say four inches. Ram down the new surface well, and if any part appears soft, reinforce it to maintain a good tread. Bits of broken stones, bricks, clinkers, cinders, and similar waste matter may be used, providing they are all well rolled in.

Having thus obtained a good sound foundation, cover your path with about an inch of sand, which should be raked level also. Now join up your pegs with string so that you may have a definite guide in forming the two edges.

Now you are ready for your stones. Take first of all the larger ones and place them in the centre

of the path, keeping the smaller pieces for fitting in around them, and working up to the edges of the path.

Keep testing your path to see that it is level. You can do this with a straight piece of wood say about six feet long. Tap in each piece of stone with your ramming pole. You may find it necessary to raise or lower the end of your stones as you go along. This can be done with a trowel.

Above all things see that none of your stones rock, and when you have made sure of this, you are ready to cement them in.

First brush your new path with a hard brush, so that any sand lying between the stones can be brought out. Now mix up a bucketful of liquid Portland cement, composed of three parts sifted sand, and one of cement. Pour this between the cracks, and after about half an hour, sweep again, and thus get rid of all the cement that has not run between the stones. The next day, you will be able to frame up the edges of the path with cement also.

A path composed entirely of cement may be made by preparing the lower surface in the same way, then pouring over it a level of liquid cement, and while it is still wet, cut out various shapes with a pointed stick and allow to dry. But this method is neither as beautiful or as economical as the other one.



A GARDEN LOUNGE

HERE is the ideal complement to a hot afternoon and a favourite book. A serviceable and inexpensive Lounge for the garden. Easy to construct. But not, we think, quite so easy to get up from. The back rest is adjustable, and when not required, the whole Lounge folds up neatly out of the way.

Red Deal or Oak are both quite suitable. Make a start on the frame, which is cut from wood 3ins. by $\frac{1}{2}$ ins. For the legs and back rest use 2ins. by 1in. The front cross rail of the frame is let into the end by means of an open mortise and tenon joint. The back cross rail is fitted by a mortise and tenon of the usual kind. Round the legs off at the top, and bore holes for the $\frac{1}{4}$ in. bolts. Altogether 8 of these iron bolts will be required, 3ins. long and of about $\frac{1}{4}$ in. diameter.

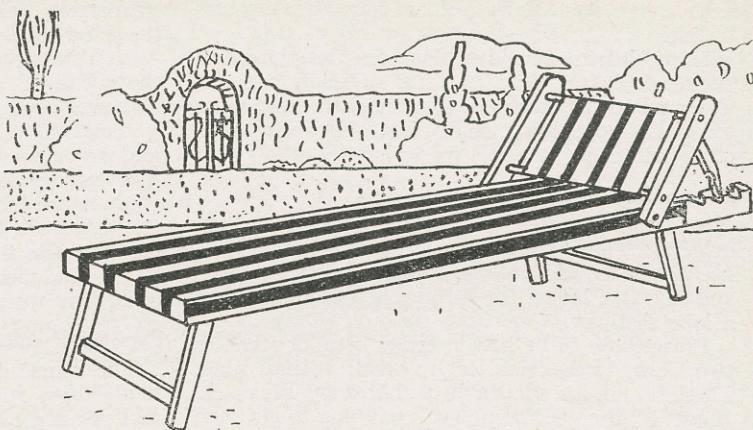
Legs and Frame

The stays in the legs are cut from wood 2ins. by $\frac{1}{2}$ in., and are jointed in as shown. For the cross rails of the back rest and its stay, use 1in. dowelling.

It will be seen that the legs fit on the inside of the frame and the back rest on the outside, whilst the stay for the back rest just fits on it. There is less likelihood of the back slipping if the ends of the stay are cut a little to a point, so that they fit the notches on the frame better. Cut two semi-circular notches out of the back rest stay where indicated, for folding up purposes.

The legs must be bolted in their place before the canvas is put on. But the back rest stay can be added to the back rest, and this to the frame, after the covering has been done.

A single width of 8ft. 6ins. of canvas will be required. Cut off



6ft. 6ins. for the frame, leaving 2ft. for the back rest. Use large-headed tacks, and where they go through, that is on the bottom surface, use the canvas double thickness.

At the front of the frame the corners can be turned over, but at the other end you will have to cut a V shaped piece out. Pull the canvas taut

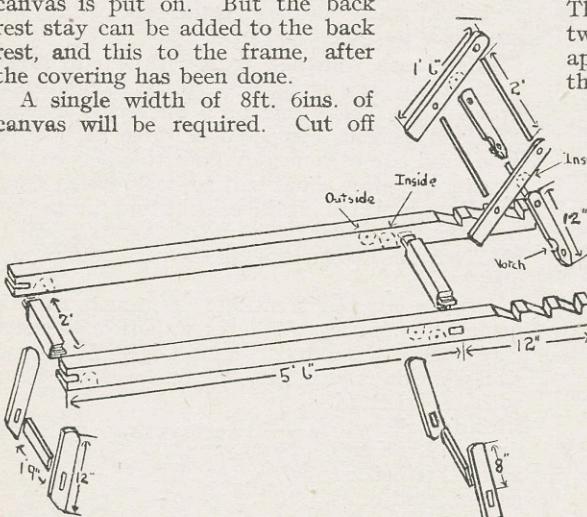
CUTTING LIST

Pieces	Description	Length	Width	Thickness
2	Sides of frame	6ft. 6ins.	3ins.	$\frac{1}{2}$ ins.
2	Ends of frame	2ft. 0ins.	3ins.	$\frac{1}{2}$ ins.
4	Legs	1ft. 0ins.	2ins.	1in.
2	Leg stays	1ft. 9ins.	2ins.	1in.
2	Sides of back rest	1ft. 6ins.	2ins.	1in.
2	Sides of back rest stay	1ft. 0ins.	2ins.	1in.
2	Back rest rails	2ft. 2ins.	1in. diameter	
1	Back rest stay rail	2ft. 0ins.	1in. diameter	

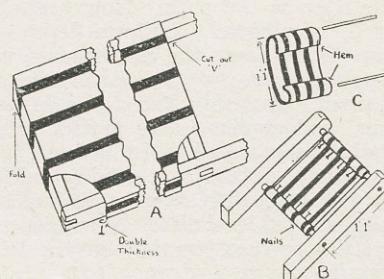
before putting each tack in, and use the tacks fairly close together. The back rest can be covered in the same manner.

A better way than tacking to the dowelling is to sew the canvas round it, if this can be arranged. The easiest way of doing it would then be to sew two hems in the canvas the required distance apart, and push the lengths of dowelling through them before these were glued into the back rest.

A coat of clear varnish is as good a finish for the wood as any, or light stain and varnish if preferred.



Particulars of construction with dimensions



How canvas is added to frame (A), to the back rest (B), and sewn by hem method to back rest (C)

The best OIL for PRESERVING GARDEN TOOLS

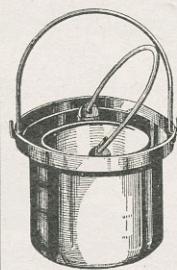


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instructions cost
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Professor Hilton, on November 19th, 1936, from the B.B.C., broadcast a warning. The warning was to the effect that while there are many really good and reliable Colleges teaching by correspondence, there are many others which are colleges by name only. He said some so-called colleges rented a couple of rooms in a large building in a well-known street. Some made great promises which they did not intend to fulfil. Some claimed successes they could not prove. In some cases the names of prominent men were quoted who were in no way connected with the working of the College.

NOW BE ADVISED BY ME

The big name of a college is no proof of its national standing. The Bennett College has been established over 30 years and our entire building is devoted to Bennett College work. No other business of any kind is either on or attached to the Bennett College. We have seating accommodation for over 10,000. We have a permanent staff of over 190 people on the College premises. Our Professional Staff have all passed their examinations, and our tutors are all experts in their own specialised work. We do not send out any homework to be corrected by tired spare-time tutors. All students' homework is corrected on the College premises the same day that it arrives, and is returned by evening post. This College is Technical, Scientific, General and Commercial, thus enabling us to cater for all requirements; this is important to Cost and Works Accountants, and all who have to deal with rate-fixing machining allowance, and it is also of great importance in many of the Civil Service Examinations. This is an entirely British College. Most of our textbooks are written on the College premises by our own professional staff, especially for tutorial purposes. Our tutors specialise in teaching students for the examinations they themselves have already passed.

THERE IS NO OTHER COLLEGE IN THIS KINGDOM THAT CAN CLAIM ALL THE ABOVE ADVANTAGES

It is not necessary for students to attend the College; we can send exactly the same tuition to you by post for a reasonable fee payable monthly. Anyone who reads the journals knows that there are many things advertised that one can study, and any kind of study is good. It is training for the brain, but the best thing to study, surely, is a course specially prepared to teach your own vocation, or prepare you for the examination which you have in view. Knowing that you are master of your job gives you self-confidence and personality, but a Diploma from a College is absolute proof of your efficiency. We have agencies in all English-speaking corners of the world. The nature of our business makes us keep in touch with employment requirements in all parts of the world, therefore we specialise in preparing students for the good positions which we know exist, and for all the worth-while examinations.

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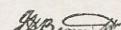
If it is your desire to make progress and establish yourself in a good career write to us for free particulars on any subject which interests you, or if your career is not decided, write and tell us of your likes and dislikes, and we will give you practical advice as to the possibilities of a vocation and how to succeed in it. You will be under no obligation whatever. It is our pleasure to help. We never take students for courses unless we feel satisfied they are suitable. Do not forget that success is not the prerogative of the brilliant. Our experience of over 30 years proves that the *will to succeed* achieves more than outstanding brilliancy.

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A SCOUT FIRST-AID CABINET

For full details see page 123

MATERIALS SUPPLIED

Fretwood—

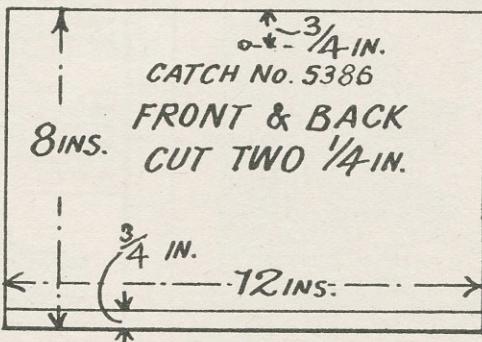
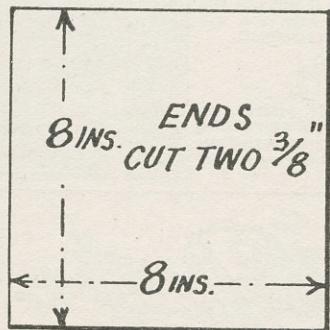
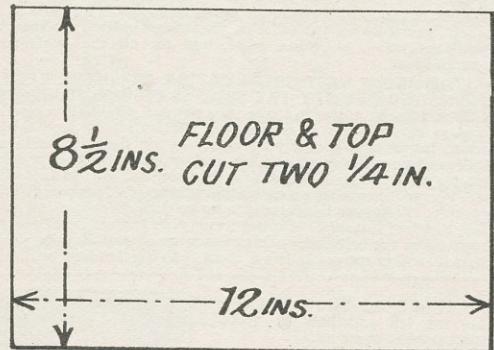
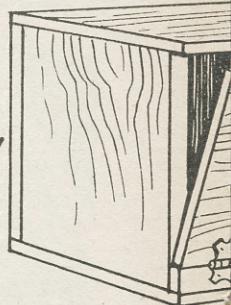
For making this Cabinet we supply a parcel of Oak, with four No. 27 Toes, 5/6, post free, 6/-.

Fittings—

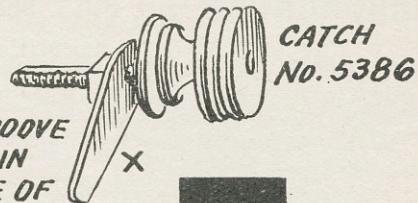
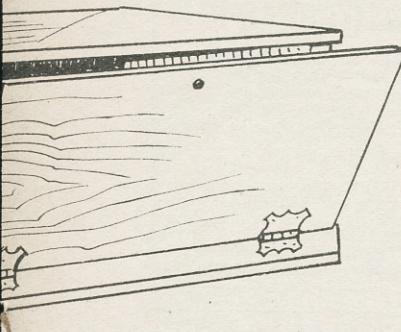
Hinges (5308 1in.) 2d., Catch (5386) 4d., postage 1½d.

A complete parcel wood and fittings will be sent for 6/6, post paid.

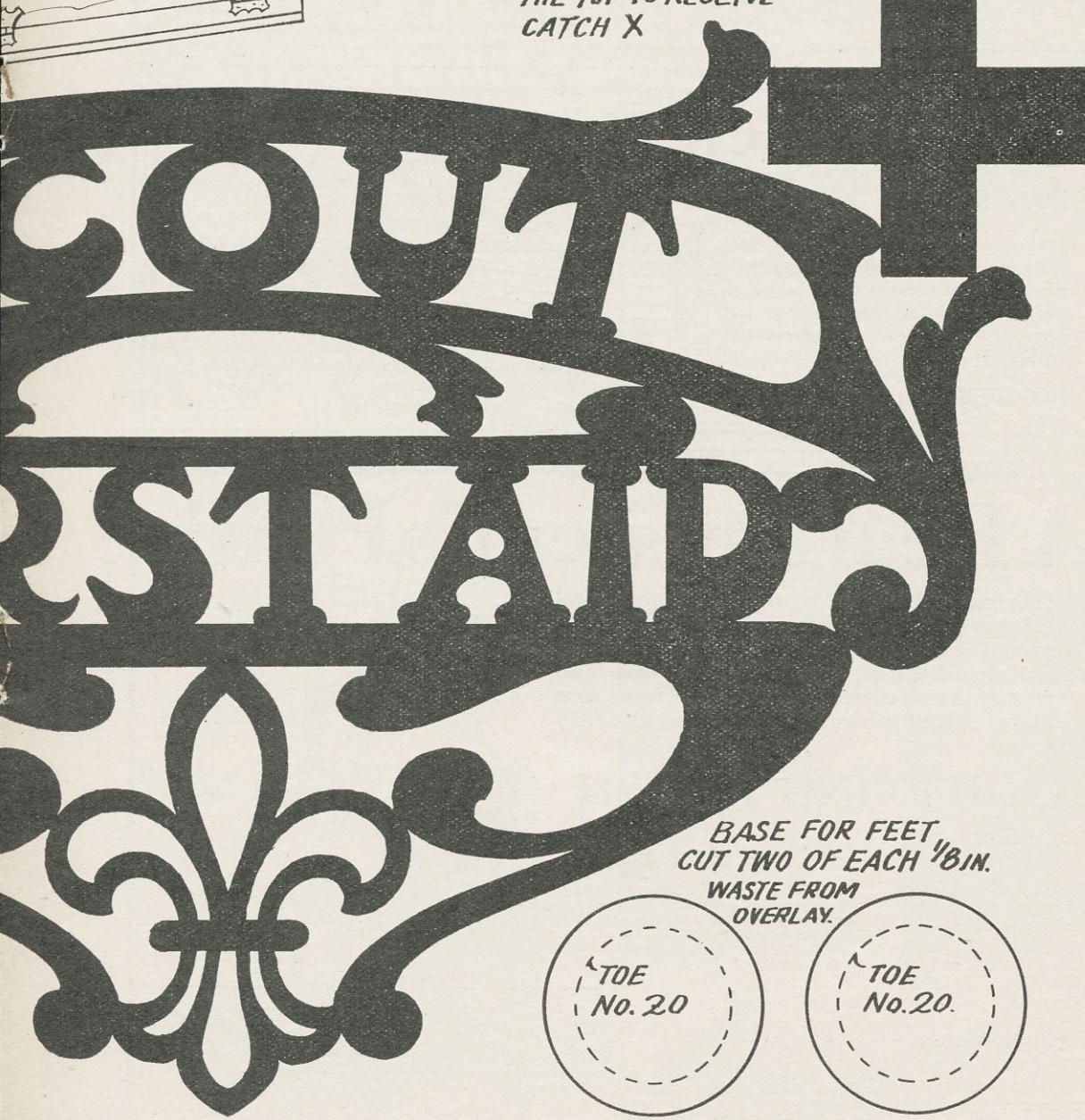
SHOWING
CONSTRUCTION
OF BOX.



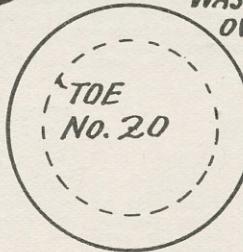
OVERLAY
CUT ONE 1/8 IN.



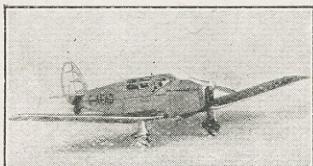
A SHALLOW GROOVE
WILL BE MADE IN
THE UNDERSIDE OF
THE TOP TO RECEIVE
CATCH X



BASE FOR FEET,
CUT TWO OF EACH $\frac{1}{8}$ IN.
WASTE FROM
OVERLAY.



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Block made from seasoned Beech, beautifully finished and comfortable to handle. A double Iron 2 $\frac{1}{2}$ in. wide is fitted in the approved manner. You cannot buy better "plane" value. Get one NOW!

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A NOVELTY WHIRL-BALL GAME

HERE'S a novel little game you could make in an idle moment. As its name implies, a steel ball is manipulated into a "whirl" track. This, as you can see, is numbered, the highest score being in the centre.

It seems quite easy, and looks tempting, but as a very questionable score is directly beneath, the temptation rather wanes, although you will sometimes want to test your skill in scoring a "bull" and thus beating the other player. Which, after all, is only human nature.

If you repeatedly score nil, then there is no alternative but to try track No. 5. This also appears easy, and as a matter of fact, it is. But, as you can never be sure of the momentum or impetus of the ball—well, it is either an "also ran" or it "romps home" at track No. 0!

How to Play

After a time, of course, you will grow more accustomed to the gravity level of the board, and in consequence, more proficient in checking the speed of the ball. Nine times out of ten, however, it won't just work out as you want it—which adds to the interest and skill of the game.

For convenience to players, a small scoring dial is provided at the base. Any number of players can take part, each having 10 or 15 shots. Unlike the rule of other ball games, they do not take single



shots alternately, that is, turn about, but take the lot at one sitting and indicate their scoring on the dial accordingly.

This is written down, then another player takes his turn, and so on to the end, when the scores are compared and the participant holding the highest points adjudged the winner.

Incidentally, the scoring dial and numbered disc patterns are actual size and must not be pasted to anything as yet. On the other hand, the elevator and arrow patterns are pasted or traced to $\frac{1}{8}$ in. plywood and cut out.

The Baseboard

The bed or baseboard detailed at Fig. 1 is cut from $\frac{1}{8}$ in. plywood, either oak or birch. The only cut-outs are the trigger mortise and whirl channel. In marking out the latter, which is only $\frac{1}{16}$ in. wide, first equally divide the top end to obtain the whirl centre as indicated.

Now, strange and impossible as it may seem, the whirl is made with the compasses. Working from the left-hand side of

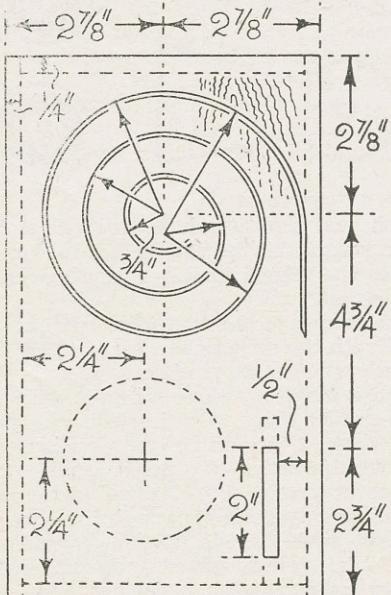
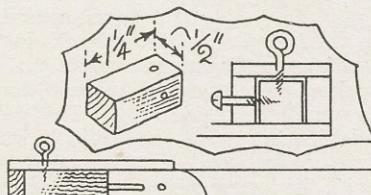
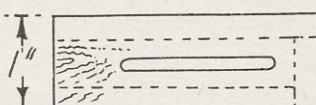
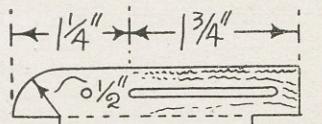


Fig. 1—How to mark the board

Fig. 3—Details and dimensions of various parts required

the rectangular central line, set the compass to $\frac{1}{8}$ in. and strike half the circle, then set to $1\frac{1}{2}$ ins., do ditto, and increase again by another $\frac{1}{8}$ in. to make a wider semi-circle (see left-hand arrows).

Now reduce the last semi-circle by $1/16$ in., this also applying to the other two radii lines. You should now have half a bull's eye.

The second half (right-hand side) of the whirl is made in similar fashion, except that you must work from an eccentric point which is about $\frac{1}{8}$ in. below the proper or first central point. The arrows show how to set the compasses and should make everything quite clear, the $1/16$ in. reductions corresponding with the left half (gosh, this is like football!) and thus completing the whirl.

Guiding Strip

Cut the whirl completely out with the fretsaw, and then branch off at the right-hand side of the board as shown. When the board surface has been glasspapered, obtain a strip of thin plywood

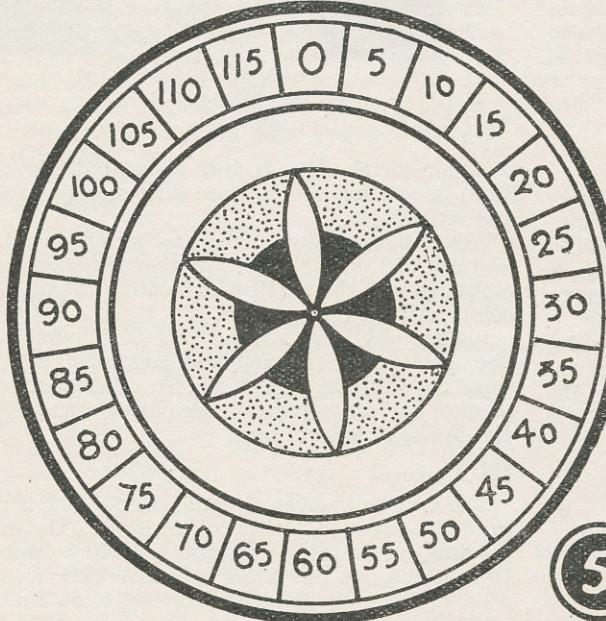


Fig. 2—Full size patterns of the marking disc, pointers, and scoring numbers

measuring (short-grained) about 36ins. long by $\frac{5}{8}$ in. wide by $1/16$ in. thick.

This is carefully glued to the whirl channelling to be flush with the underside. If you cannot get a piece of such plywood the length given, shorter pieces (say) 9ins. long or less would serve, and without obstructing the ball in any way owing to the curvature in the base.

When gluing in place, keep the board on a flat surface. Tap the wood gently with a small hammer. Having it neatly embedded, a short piece of dowel or wood should be tapped all round the inside of the tracks to keep it even underneath.

The board is edged with strips of fretwood $\frac{1}{8}$ in. wide by $\frac{1}{8}$ in. thick. Glue and nail the longer pieces to the sides first, then attend to the ends.

The slotted trigger pieces shown at Fig. 3 are

the next consideration. The tenoned part, which is cut from $\frac{1}{8}$ in. wood, could now be glued to the base mortise. Before adding the covering piece, which is cut from $\frac{1}{8}$ in. wood, a small block of wood ($1\frac{1}{4}$ ins. by $\frac{1}{2}$ in. by $\frac{1}{2}$ in.) should be fitted to move freely inside (see inset at Fig. 3).

This is the trigger, and in order to give it a

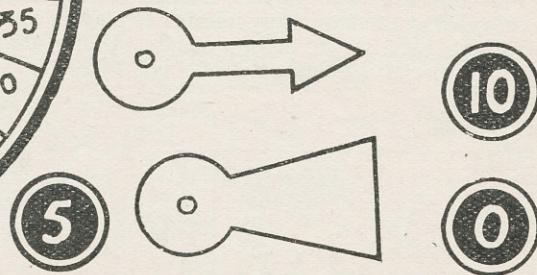
MATERIAL LIST

1 piece plywood.	11ins. by 6ins. by $\frac{1}{8}$ in. thick.
1 piece plywood.	36ins. by $\frac{1}{8}$ in. by $1/16$ in. thick.
1 piece fretwood.	24ins. by $\frac{1}{8}$ in. by $\frac{1}{8}$ in. thick.
1 piece fretwood.	12ins. by $\frac{1}{8}$ in. by $\frac{1}{8}$ in. thick.
1 piece fretwood.	3ins. by $\frac{1}{8}$ in. by $\frac{1}{8}$ in. thick.
1 piece plywood.	6ins. by 1in. by $\frac{1}{8}$ in. thick.
1 piece stripwood.	1ins. by $\frac{1}{8}$ in. by $\frac{1}{8}$ in. thick.
1 brass hook-eye.	1ins. by $\frac{1}{8}$ in. by $\frac{1}{8}$ in. thick.
1 steel ball.	1in. in diam.

movable force, we have resorted to roundhead screws and an elastic band about $\frac{1}{8}$ in. long. Drive a $\frac{1}{8}$ in. by 3 roundhead screw into the chute hole so its point does not protrude at the inside. Now mark the elongated slot shape on the block with a scribe or pencil, then remove and make a hole at the extreme end of the slot mark.

Set the block in position and drive in a $\frac{1}{8}$ in. by 3 brass screw. The shank of same must—like the other—project $\frac{1}{8}$ in. from the chute piece and move freely in the slot.

Slip on the elastic and test the movement before gluing the covering piece on top and screwing in a small picture chain hook-eye. The width of the slot in this piece, of course, must conform with the thickness of the hook shank. It would be advisable to make it a trifle wider to ensure absolute freedom.



As a finish, just give the whole work one or two coats of clear varnish. Be careful not to varnish the inside of the trigger chute—a brush over on the outside would suffice.

While the last coat is still tacky, cut out the scoring dial with the scissors and press neatly and firmly in the approximate position indicated. The numbered disc pieces are then adhered inside the tracks in the order given. By the way, you could also attach these with gum before varnishing the board, the varnish acting as a preservative.

The indicator arrow and elevator piece must also be varnished. When dry, attach the latter to top end edging with a single $\frac{1}{8}$ in. by 3 roundhead brass screw. The arrow is affixed to the dial with a shorter screw as seen by the drawing. The steel ball used in this game must be $\frac{3}{8}$ in. in diam.

NOTES AND NEWS

MODEL AIRCRAFT TOPICS

THANKS to the excellent little engines now on the market, the petrol-engined model plane appears to be winning considerable popularity. Three important contests for this type are to be held this Summer, two of them at Fairey's Great West Aerodrome, Heath Row, Middlesex, on August 2nd, under the auspices of the Society of Model Aeronautical Engineers.

The first of these is the annual competition for the Sir John Shelley Cup. The second—for an extremely handsome trophy presented by Capt. C.E. Bowden, Britain's foremost petrol-plane enthusiast—is open to all nations. The third contest is being arranged by a popular monthly magazine.

A teaspoonful of petrol is sufficient to fly one of these models for well over half-an-hour, in which time it can cover a considerable distance.

The rules of the contests require the models to keep within the boundaries of the aerodrome, which safety measure affords a splendid exercise in plane control. Models are also required to be fitted with some timing device which will shut off the engine after a certain period.

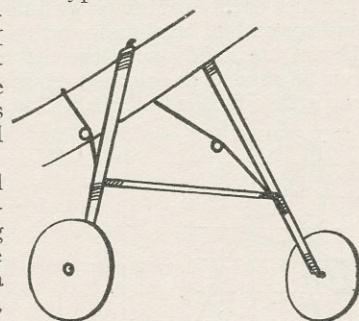
The S.M.A.E. is now drawing up rules so the rapidly increasing use of petrol-planes may not be a source of danger to the general public.

Wakefield Hopes Emerging

THE first of the models designed to the 1937 Wakefield Cup rules are now emerging, and are causing considerable interest by reason of the differing views which various model designers have taken as to the best type to build to meet the changed conditions. Recently I have been privileged to see one of these machines on the ground and in the air.

It is an unusual but very attractive high-wing monoplane. The fuselage has a cabin built in, which, in addition to imparting a realistic appearance, has the advantage of enabling the rubber to be watched for any vibration sufficient to foul the fuselage structure.

The wing, however, is the most interesting feature. It is swept-back as well as tapered, and carries ailerons set at a negative angle and hinged, so that they help to stabilise the model and can be adjusted to overcome the torque of the propeller.



Showing the raised axle

Instead of being made in one piece and mounted flat on top of the cabin, this wing is in two parts, each plugging into holes in the fuselage side, and being braced by a triangular hollow strut. Some very fine flights have been achieved in weather which was far from ideal.

World's Indoor Record ?

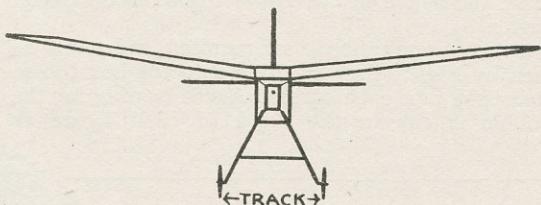
THE indoor flying meetings held at the Albert Hall, London, during the winter, have been responsible for some very fine performances by 'spar' and fuselage types of ultra-light microfilm-covered models.

The outstanding achievement was a flight of no less than 18 minutes 52 seconds with a 'spar' by Mr. R. Copland, of the Northern Heights Model Flying Club, who came third in the 1936 Wakefield contest. This is believed to be a world record. Another interesting model was a midget edition of Mr. Judge's 1936 Wakefield winner, built by Mr. J. W. Iles, of The Model Aircraft Club.

Undercarriage Details

IT is the writer's practice to deal briefly, from time to time, with various design and constructional points which cause sundry modellers to stumble. This month we will take the undercarriage. One has always taken the view that this component should be more than an ornament, and it is gratifying to note that in the majority of present-day contests, models are required to rise from the ground.

Too many constructors skimp the undercarriage in the cause of weight-saving, chiefly by reducing the 'track' or distance between the wheels. If this is less than one-sixth of the wing-span, the machine will have a tendency to turn over, under the influence of torque, when taking-off.



Front elevation showing relation of wheel track to wing-span

Too much care cannot be taken to ensure that the wheels turn freely, and that they lie accurately along the line of flight. If either is turned to one side, the model will refuse to hold a true course.

Another common practice, which the writer feels can scarcely be justified by the very small saving in weight and resistance, is the omission of the axle.

Airman

A NOVELTY KNITTING BOX AND HOLDER

THE novel knitting box illustrated here is just the thing for a lady, and a glance will indicate that the top of the box is provided with a novel form of holder for the wool when the box is in use.

The sides of the box are made in wood $\frac{1}{4}$ in. thick and two are required 14ins. long by 5ins. wide, and two 7ins. long by 5ins. wide. These sides are held together by gluing them into pieces of corner moulding with $\frac{1}{4}$ in. grooves (either No. 37 or No. 46) cut off 5ins. long.

The top of the box indicated in Fig. 1, is made in wood $\frac{1}{4}$ in. thick, and first cut this to size 15ins. long by 8ins. wide. Measure a distance of 3ins. from the back edge of the top, and a distance of $\frac{1}{2}$ ins. from the ends, and then cut the two slots $\frac{1}{2}$ in. long by $\frac{1}{2}$ in. wide as shown in Fig. 1.

On a centre line through the top and 1in. from the front edge, make a point for a small eye screw to form a guide for the wool.

The supports which form the holder for the wool bobbin on the box top are cut from wood $\frac{1}{4}$ in. thick and details are given in Fig. 2. First cut

CUTTING LIST

- 2 pieces, 15ins. long by 8ins. wide by $\frac{1}{4}$ in. thick.
- 2 pieces, 14ins. long by 5ins. wide by $\frac{1}{4}$ in. thick.
- 2 pieces, 7ins. long by 5ins. wide by $\frac{1}{4}$ in. thick.
- 2 pieces, 5 $\frac{1}{2}$ ins. long by 2 $\frac{1}{2}$ ins. wide by $\frac{1}{4}$ in. thick.
- 1 piece, 4ins. long by 3 $\frac{1}{2}$ ins. wide by $\frac{1}{4}$ in. thick.
- 4 pieces, $\frac{1}{4}$ in. grooved corner moulding, 5ins. long.

the wood 5 $\frac{1}{2}$ ins. long by 2 $\frac{1}{2}$ ins. wide, and then the tenon on the bottom edge $\frac{1}{4}$ in. wide by $\frac{1}{2}$ in. deep, a distance of $\frac{1}{2}$ in. from the front edge as shown. Now divide the surface into $\frac{1}{2}$ in. squares and then draw the shape of the figure from the details in Fig. 2.

Two of these supports are required, and as will be seen by Fig. 1, they are fixed into the box top so that they face each other. A slot bearing for the bobbin is cut in the hand of each figure as

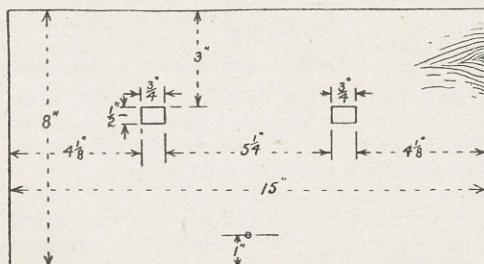


Fig. 1—Details of the Top

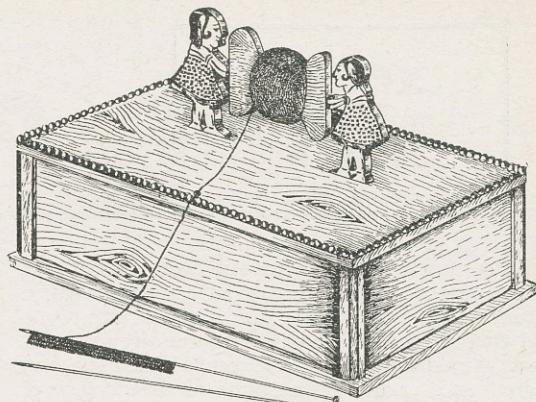


Fig. 2—The figure support shape

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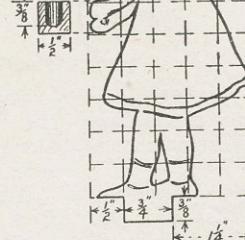
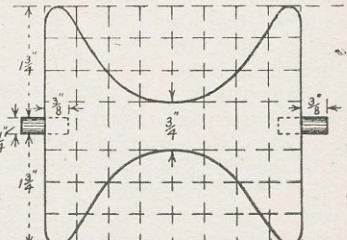


Fig. 3—The wool holder



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indicated by the small detail in Fig. 2, and these are made $\frac{1}{2}$ in. long by $\frac{1}{4}$ in. wide by $\frac{1}{2}$ in. deep.

The bobbin, which is indicated in Fig. 3, is made from wood $\frac{1}{4}$ in. thick, and first cut this to size 4ins. long by 3 $\frac{1}{2}$ ins. wide. The curved shape of the bobbin is readily formed by first marking off the surface into $\frac{1}{2}$ in. squares and then drawing the outline from Fig. 3. In the centre of each end drill a $\frac{1}{4}$ in. hole $\frac{1}{2}$ in. deep, and fix a piece of $\frac{1}{4}$ in. dowelling into the holes to project $\frac{1}{2}$ in. from the ends which will form the support in the bearings cut in the two figures in Fig. 2.

Top and Bottom Pieces

The bottom of the box is simply a piece of $\frac{1}{4}$ in. wood 15ins. long by 8ins. wide, and is fixed in position with a little glue and small nails driven into the corner moulding from underneath.

The top is hinged to the back side with two small hinges, and then the two support figures for the wool bobbin are fixed into the slots in the lid with faces toward each other. The wool bobbin simply fits into the slot bearings between the figures after it has been wound with the wool, and the end is passed through the small eye screw on the lid front.

A nice effect is obtained by fixing strips of 3/16in. half round ball beading round the edges of the lid. If you are handy with the art brush, the figures can be shaded in coloured enamel and the rest of the article finished off with stain.

A SMALL OCCASIONAL OR SMOKER'S TABLE

SMALL tables for the lounge are always most popular with our home craftsmen, and here is another this week.

The table shown in the sketch stands 20 $\frac{3}{4}$ ins. high and is 13 $\frac{3}{4}$ ins. square on top.

The attractiveness of it lies in the legs which are square for most of their length with the remainder turned octagonally which imparts such a beautiful appearance. The shaped sides, too, add much to the appearance and give it a somewhat oriental aspect.

A start should be made with the legs themselves and these are bought from Hobbies for 1/9 the set of four. They are 20ins. long and 1 $\frac{3}{8}$ ins. square, and each leg is nicely and cleanly turned from hard wood which will be found to take the finishing stain exceedingly well. It is necessary to have the legs all cut to an even length and perfectly square across the top.

The Leg Frame

So then, first lay all the legs together side by side and even at the foot or turned end. Then mark off 19 $\frac{3}{4}$ ins. and saw each to the mark keeping a perfectly square cut. A fine-tooth tenon saw is best for this. Each leg has two deep grooves $\frac{3}{8}$ in. deep and $\frac{1}{4}$ in. wide, these making the construction of the table extremely simple as it is only necessary to prepare the sides or panels and just knock them in and glue them.

The bottom parts of the legs are held together by cross rails dowelled in. The dowel hole must be bored on the same sides as where the grooves appear, but, of course, on the flats at the foot of each leg.

Mark out the end shape of the rails, keeping them centrally in the space, and through this again mark in the diagonals which will give the exact position of the dowel holes.

Run these in with $\frac{1}{8}$ in. brace and bit and drive

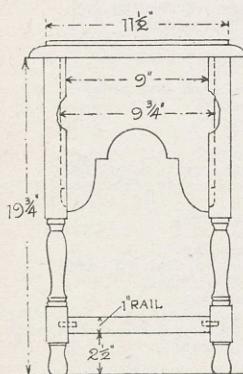


Fig. 2—Side elevation

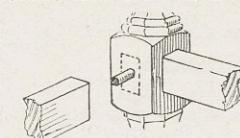


Fig. 1—How the legs and rails are dowelled

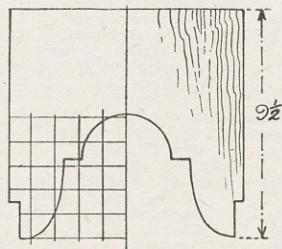


Fig. 3—Shape of the side panels

in the $\frac{1}{8}$ in. diam. dowels 1in. long. These are shown in the front view of the table at Fig. 2. Cut off the four leg rails 9ins. long from 1in. by $\frac{1}{8}$ in. stuff, and carefully bore holes $\frac{1}{8}$ in. diam. in the ends for the insertion of the dowels.

Take each pair of legs and rails and glue and knock them together taking care not to bruise the legs in the process.

The Side Panels

Next prepare the panels for the sides. These are cut from $\frac{1}{8}$ in. wood 9 $\frac{1}{2}$ ins. long by 9 $\frac{1}{2}$ ins. wide, and the diagram at Fig. 3 shows how to set out the shape by means of the 1in. squares. Take note of the notches which are cut away from the lower end of the panel, to allow for covering the curved portion which finishes each groove in the leg. The width of this notch on the face will, of course, be $\frac{1}{8}$ in. (the measurement of the depth of the groove).

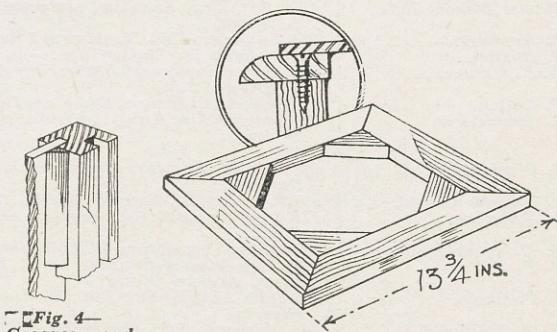


Fig. 4—Grooves and fillet block

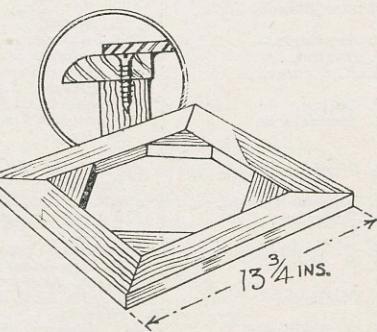


Fig. 5—The framework of the top

One panel should be cut round with the fretsaw and the edges cleaned up with fine glasspaper. Then this can be used for drawing round to get the other three sides. All should be finally tested for squareness and any unevenesses put right. Finally the grooves in the legs should be brushed with glue and the panels slid in.

If any extra fixing is thought necessary, one or two pieces of angle fillet may be cut off and glued in the angles inside, as seen in Fig. 4.

The Top

There are two ways of making this. Either it may be of solid wood, moulded on the edges and screwed and glue-blocked on, or it may be made up as a frame with a covering of wood put over as detailed in Fig. 5.

The disadvantage with the solid top is that the wood being $1\frac{3}{4}$ ins. wide is liable to twist and warp.

The framed method is better and is not difficult to work. Four rails $1\frac{3}{4}$ ins. long by $2\frac{1}{2}$ ins. wide by $\frac{3}{4}$ in. thick are planed up and the ends cut to a mitre of 45° . These are glued together, and the odd triangular waste blocks which are cut from the mitres are glued to the inside angles to give strength. All these are shown in Fig. 5. See all the angles are square and are 90° before rounding off the top edges and finishing them with coarse and fine glasspaper.

The frame is finally laid on the top of the legs and sides and screws are run down through it into the tops of the legs. The top cover of wood may be either plywood or solid wood glued and screwed to the frame, the screws being properly countersunk and the heads afterwards filled with plastic wood.

All the woodwork should receive a light glass-papering, and if mahogany has been adapted for

CUTTING LIST

4 pieces $9\frac{1}{2}$ ins. by $9\frac{3}{4}$ ins. by $\frac{1}{2}$ in. sides.
 4 pieces 14 ins. by $2\frac{1}{2}$ ins. by $\frac{1}{2}$ in. top.
 1 piece $11\frac{1}{2}$ ins. by $11\frac{1}{4}$ ins. by $\frac{1}{2}$ in. top.
 1 piece 9 ins. by $4\frac{1}{2}$ ins. by $\frac{1}{2}$ in. rails.
 1 foot $\frac{1}{2}$ in. dowel rod.
 6 feet $\frac{1}{2}$ in. triangular fillet.
 4 legs No. 536 (20ins. long $1\frac{1}{2}$ in. sided).

the panels or sides, then the legs, being of a lighter wood, must be stained to match.

The actual finish might be either varnish or polish laid. The shaped cut edges of the panels must be neatly covered with a smaller brush.

An excellent mahogany stain can be made up from one of Hobbies 4d. tins of Powder Dye. It can be made to any desired shade to match other mahogany wood, and is quickly and easily applied. A bottle of light or dark varnish for finishing can be got for 1/- also from Hobbies.

HOBBIES LEAGUE CORRESPONDENCE CLUB

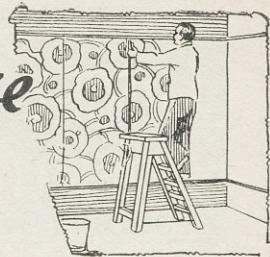
These Members of Hobbies League would like to get in touch with other readers and so form pen friendships which will undoubtedly prove interesting to all. In this way, one has a wide circle of friends and increased knowledge in people and places, not only in one's own country, but all over the world. Members should write direct to the addresses given, stating their full address and age, adding any hobbies in which they are interested. Hundreds of members have already taken advantage of this Correspondence Club in this way and others who wish to do so should notify the Registrar with the necessary particulars.

NAME	ADDRESS	WANTS FRIENDS	INTERESTS, Etc.
D. S. Dolan.	2 Waverley Avenue, Bradford, Yorkshire.	Anywhere.	Philately, Photography and Woodwork.
E. Clements.	108 Halifax Rd., Rippenden, Nr. Halifax.	Anywhere except British Isles.	Anything.
Ib Glarborg Petersen.	Lembkesvej 3, Haderslev, Denmark.	Anywhere.	Stamps, Snaps, Photographs, and Postcards.
E. K. Wellington.	C/o. Council Rd., House No. 42 Sekondi, Gold Coast	British Isles and France.	Fretwork and Photography.
G. A. Teal.	44 King St., Normanton, Yorkshire.	Any British Colony.	
Laurie O'Connor.	9 Princes Mansions, Jetty Rd., Glenely, Adelaide, S. Australia.	Anywhere.	First day covers of the Coronation Stamps.
D. Hirst.	Heymoor House, Shepley, Nr. Huddersfield	America.	Model Aeroplanes and Stamps
M. Hickmott.	Yorks.	New Zealand.	Anything.
Joan Cheesman.	Stoneham, Laddingford, Nr. Yalding, Kent.	Arabia.	Electricity, Wireless and Aircraft.
A. L. Wing. Master Mendel Joffe.	7 Macdonald Rd., Forest Gate, E.7.	Anywhere.	Stamp Collecting and Photography.
J. Dewhurst.	Waltheof Gdns., Tottenham, N.17.	Anywhere.	Fretwork and Aircraft.
J. Buxton.	433 Fox St., Fairview, Johannesburg,	Anywhere.	Model Aeroplanes.
A. K. Gomes.	S. Africa.	Anywhere abroad.	Fretwork and Pets.
P. Cotton.	251 St. James Rd., Blackburn, Lancs.	Anywhere abroad.	Fretwork, etc.
C. Mendelsohn	44 Newlands St., Shelton, Stoke-on-Trent.	Anywhere.	Stamps.
J. Blenkinsopp.	C/o Water Engineers' Office, Municipality	Anywhere abroad.	Stamps, etc.
F. Nuorah Oraeki.	Singapore, S.S.	Anywhere, preferably British Empire and U.S.A.	Fretwork, Stamps, and exchanging Newspapers.
A. Sadgrove.	61 Albion St., Nr. Spennymoor, Co. Durham.	Anywhere but Gt. Britain.	Anything.
G. G. Beveridge.	c/o P.O. Box 14, Enugu, Nigeria, B.W.A.	Anywhere.	Anything.
G. F. Holtum.	179 Loughborough Rd., Brixton, London, S.W.9.	Anywhere, between 12 and 16 years.	Cycling, Camping and Electricity.
F. E. Okofo.	Foushiels, Stoneyburn, W. Lothian.	British Dominions.	Anything.
J. G. Archibald.	"Mabley View," Stumble Lane, Kingsnorth, Ashford, Kent.	British Empire, between 14 and 17 yrs.	Stamp Collecting, Scouting, Photographs and Fretwork.
	c/o John Holt & Co., Ltd., Umuahia, S. Nigeria.	Anywhere, preferably a girl.	Anything.
	44 Wishaw Rd., Waterloo, Wishaw, Lanarkshire, Scotland.	Anywhere.	Anything, especially Stamp Collecting.



Jobs about the House

Repairing Locks and Hinges



LOCKS are amongst the least likely items of household fittings to go wrong, but when they do, it is very handy to have just that necessary bit of knowledge to put them right again. Built of robust construction as they are, almost the only breakable parts are the springs, and these are easily replaceable.

Non-lever locks, like those usually fitted to interior house doors have but few working parts. Remove the lock by taking off a handle and withdrawing the spindle and screws, and lay on a table previously covered with a sheet of paper.

The cover plate is secured with two or more screws and removal of these will expose the mechanism.

Oiling

Note the respective parts and their relative positions, then take out, clean in paraffin and before replacing, lightly oil with good machine oil.

If the spring is broken, a new one can be bought from any locksmith or hardware store, or one can quite easily be made for the purpose. The broken pieces of old spring will show the shape if not, study Fig. 1.

A piece of clock spring, say 4 ins. long, will do for the material. This should be made red hot

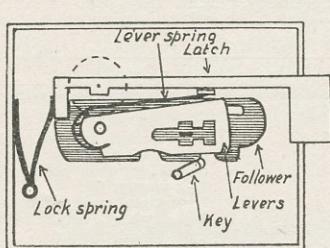


Fig. 1—The interior of a plain lock



Fig. 2—Latch position

and allowed to cool slowly so as to soften the metal. It can now be bent to the shape required but needs to be hardened and tempered.

Quite a simple job this. Heat the spring to redness and plunge into cold water. Dry, then hold over a gas jet or lay on a hot shovel until the colour turns to blue.

Replacing the door handle, take care not to lose the grub screw, as the little screw is called, which fastens it to the spindle.

If, unluckily, it is lost do not force in any small screw or the thread of the hole will be damaged, instead turn in a small hardwood peg. This will

hold the handle in place until a new grub screw is available.

Street door locks, generally called night latches, are of the lever variety and a little more complicated.

A typical night latch, with the cover removed, is shown at Fig. 1. When removing the parts and cleaning and oiling, take care to mark the levers to simplify the business of replacing them in their correct order.

A slight nick with a file, one for the first lever, two for the second, and so on is a good way of doing this. When the parts are cleaned and oiled, care should be taken to replace them in their correct order or the key will not turn.

A broken latch spring can be dealt with as already described, if one of the lever springs is broken, a substitute can be made from a piece of watch mainspring. This should be bent to shape and hardened and tempered.

The remainder of the old spring, if any, should be prised out of the slot and the new one forced in by pressing on top with the flat edge of a screwdriver or similar tool.

Making it Shut

When a door is troublesome to shut, the latch is often at fault. Take a careful look at Fig. 2, A and B. At A, the position of the latch in relation to the box staple will not allow the door to shut without unnecessary pressure, they are too close together.

The correct relative positions to each other is shown at B and the box staple should be unscrewed and refitted further back. Should the screws in this position foul the old screw holes then raise the box staple say $\frac{3}{8}$ in. higher up.

If this leaves a strip of unpainted wood, which will look unsightly, plug the old screw holes. No trouble to do this, just whittle two hardwood pegs to fit the old holes tightly, glue, and drive in, then level off when the glue is hard.

A Filling Piece

When the door cannot close enough to allow the latch to spring fully in the box staple (a state of affairs usually due to the door having warped) and consequently it springs open on its own, remove the box staple and cut a piece of thick veneer or even cardboard to the same size. Fit this behind the box staple as it is replaced.

All hinges should have a spot of oil once a year. When broken and replacement becomes necessary, first open the door at right angles and between

(Continued foot of page 143)

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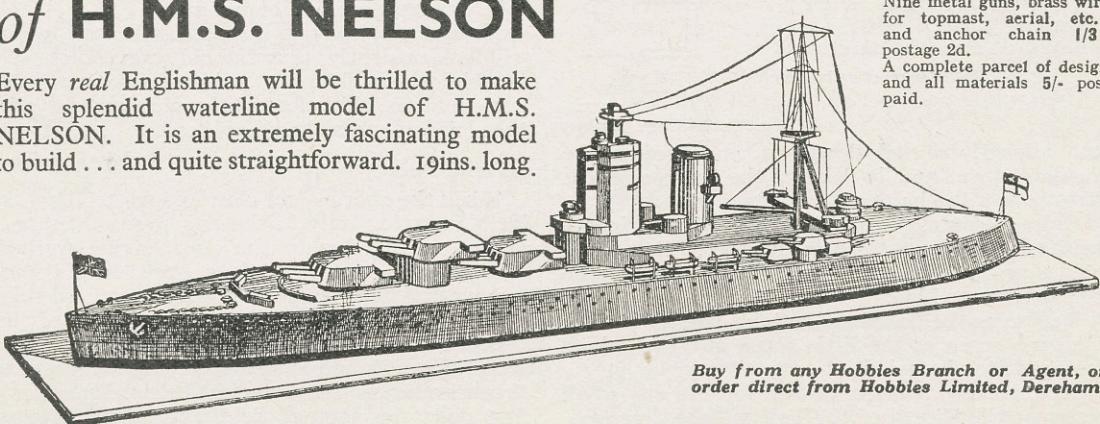
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STAMP COLLECTOR'S CORNER

CONTINUING our search through the album for ships of war which are illustrated on stamps of various countries, we find some in use for troop carrying.

Two of the 1919 set from Jamaica, the 1½d. and the 2½d.,



A Roumanian Submarine

both have parts of a vessel showing. Although the presence of troops definitely makes these into warship stamps yet in each case the amount of boat visible is so small that one cannot say what type of vessel it is.

The two stamps indicated are, of course, 'War contingent embarking!' and 'Return of War contingent!' In the same set we have a picture of the statue to Admiral Rodney.

Roumania is the first country to show a submarine on a stamp. In 1936 she issued three stamps, on one a battleship figure as the main theme, on another a very beautiful picture of a sailing ship (the cadet ship Mircea), and on the third the submarine the 'Delfinul' travelling at some speed on the surface. All these three stamps are in photogravure.

IN 1931 Roumania had the fiftieth anniversary of the Roumanian navy and to celebrate this she issued four stamps. The lowest value again had the naval ship Mircea, the next value a

battleship, and the other two had two different cruisers on them.

Italy celebrated the fiftieth anniversary of the foundation of the naval academy at Leghorn in 1931 and for this she issued three stamps. The 50c. showed a sailing ship the 'Amerigo Vespucci'



A Ship of Persia

(Amerigo Vespucci gave his name to America). The one lire twenty-five cents showed the battleship Trento.

Quite a number of the countries show pictures of battleships and



The Hamidie of Turkey

crusiers. Japan has the Warship Katori and Kashima on the 1921 set to commemorate the return of the Crown Prince from his European tour. Then in 1935, to commemorate the visit of the Manchurian Emperor to Japan, we have the cruiser Hiiei shown.

THE new pictorial stamps from Persia—(as it was then called, now of course it is Iran)—show the gunboat Palang, and among the 1913 set from Turkey we find

Repairing Locks—(Continued from page 141)
its bottom edge and the floor, drive a wedge either side.

This is to prevent it dropping when the hinges are removed. Get a friend to steady the door, fetch the stoutest screw driver available and pressing it in the slots of the screws, give it several taps with a mallet to clear the slots of paint.

Now, with a steady pressure withdraw two screws from each hinge, then loosen the remaining ones and draw out.

MORE SHIPS OF WAR

the cruiser Hamidie. The specimen was overprinted and surcharged (changed in value) for use in Iraq.

The gunboat Lark comes from Liberia 5c. in 1909; and Paraguay in 1931 gave us the 'Paraguay,' and the 'Humaita,' whilst Uruguay in 1908 shows the cruiser Montevideo and a gunboat. Greece in 1933 had a portrait of Admiral Kondouriotis with the cruiser Averoff. She also had a stamp showing the battle of Navarino fought in 1827.

Greece, however, is not the only country to show a naval battle, for the Philippine Islands show a picture of the battle of Manilla Bay.

Although to us probably the most interesting naval battle on stamps comes from Holland. In 1907 they issued three stamps (one of which is here illustrated), all of the same design, as they



De Ruyter of Holland

commemorate the three hundredth anniversary of the birth of Admiral de Ruyter. He was a Dutch admiral born at Flushing who in 1667 sailed up the Thames as far as the river Medway and burnt the shipping in both these rivers.

It is probably news to many that the Dutch had ever destroyed English boats in an English river, but such is the case, and the stamp here illustrated in a sense commemorates that fact.

The old hinges can be lifted out of the recesses and the door laid on its edge for the opposite leaves of the hinges to be removed. Clean out the recesses, purchase a new pair of hinges, same pattern as the old, and replace on the door edge first.

Lift the door in position and support on wedges as before, then tap the hinges into the recesses and secure each with a single screw for testing. Now try the door and if it shuts satisfactorily drive in the remaining hinges.

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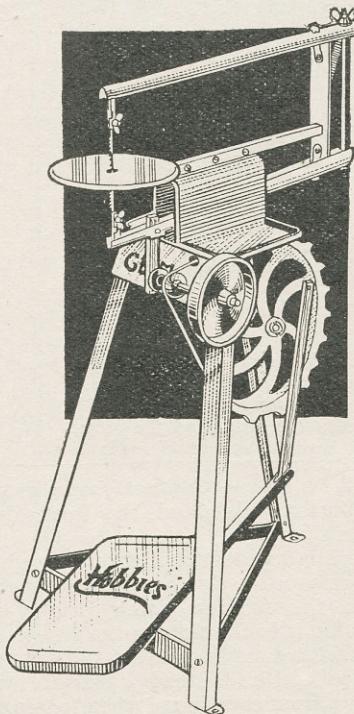
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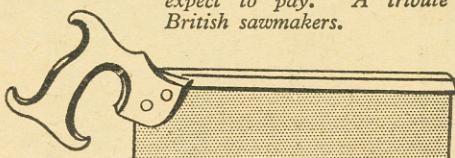
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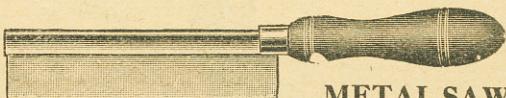
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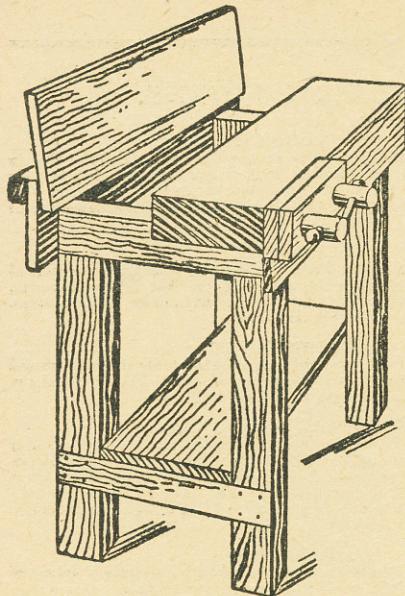
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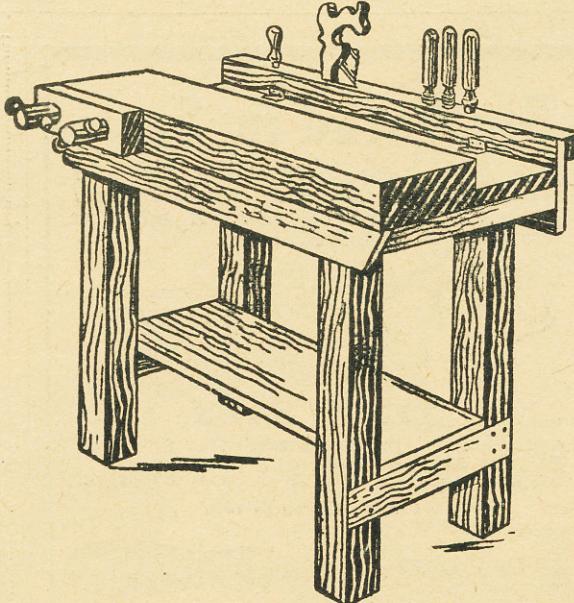
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